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|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/663,002 | SU ET AL. | |
| | Examiner | Art Unit | |
| | Michael N. Opsasnick | 2655 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to the amendment filed/received on 7/26/2004.
2. The allowed claim(s) is/are 1-31,33,36,40,42,45 and 49-69.
3. The drawings filed on 15 September 2000 are accepted by the Examiner.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO-1449 or PTO/SB/08),
 Paper No./Mail Date _____
4. Examiner's Comment Regarding Requirement for Deposit
 of Biological Material
5. Notice of Informal Patent Application (PTO-152)
6. Interview Summary (PTO-413),
 Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.

W. R. YOUNG
 PRIMARY EXAMINER

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-31,33,36,40,42,45,49-69 are allowable over the prior art of record.

2. The following is an examiner's statement of reasons for allowance:

As per the independent claims, the claim language pertaining to the exact structure of the codebooks (in terms of bit allocation), are not explicitly taught by the prior art of record. Jacobs et al (5778338) teaches a speech encoding system detecting a transition during speech (col. 14 lines 52-61); an encoder performing an encoding scheme to preprocess the signal based on a voicing of the signal (as varying the encoding scheme based on the degree of voice of the signal -- col. 3 lines 1-11; col. 14 lines 6-51); a selector for choosing a second encoding scheme (as selecting different encoding based on encoding rates – col. 14 lines 24-61, determining the speech characteristic between voiced, unvoiced, or noise (col. 14 lines 52-61), perceptual filtering and a pitch preprocessing module determining a target signal for time warping (as input speech being modified by the closed loop and open loop format residual equations -- fig. 14, subblock 570-576; thru the pitch synth filter (fig. 14, subblock 552; figs. 16,18, and 19)); and pitch tracking (as pitch preprocessing and calculating the varying pitch lag -- col. 8 lines 26-46), fixed codebook (col. 38 lines 1-24), adapted codebook use for storing residual samples of LPC coefficients (col. 30 lines 28-36), bit allocation dependent upon the

various thresholds, wherein the bit allocation is in the form of a quadratic ratio (col. 14 lines 15-16; col. 16 lines 49-67), full rate coding determining a voicing level, that is, voice and/or noise (col. 14 lines 15-61), selecting multiple encoding rates based on bit rate (col. 7 line 53 – col. 8 line 41 -- note the differing rates), receiving a speech frame for encoding (as input speech, Fig. 8), classifying the speech frame as voiced if the speech includes a voicing component (col. 3 lines 1-9), designating the speech frame as stationary or non-stationary if the speech frame is as such (as determining, not only two levels of speech, but multiple levels of speech, or the degree of voicing, --col. 14 lines 6-51); and allocating a lesser number of bits for the voice speech frame than for the non-stationary voice speech frame (as bit allocation dependent upon various thresholds -- col. 14 lines 15-16, col. 16 lines 49-67, wherein the voiced frame receives less number of bits).

DeJaco et al (5911128) teaches multiple rate encoding, but does not detail the bit allocation as defined in the independent claims. Su et al (US 2001/0023395) teaches variable rate encoding system but does not teach the exact claimed bit allocation as defined in the independent claims. Furthermore, none of the other prior art of record explicitly teaches the bit allocation as noted above in the claim language of the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Wayne Young, can be reached at (571)272-7582. The facsimile phone number for this group is (571)272-7629.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571)272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno
8/19/05


W. R. YOUNG
PRIMARY EXAMINER